Back-to-the-office Report
International Workshop on the Promotion of Sustainable Technologies in Drinking Water and Sanitation Services in Urban Settlements
Local Initiative Facility for the Urban Environment (LIFE)
Habitat International Coalition (HIC) and UNDP
6 - 9 December 1994, Tepoztlan, Morelos, Mexico

Background

UNDP's LIFE Programme, which promotes "local-local" dialogue to improve the urban environment in low-income settlements at the local/national, the regional and the inter-regional levels, has three inter-regional projects. "Promotion of Sustainable Technologies in Drinking Water and Sanitation Services in Urban Settlements", conducted by the NGO network, Habitat International Coalition (HIC), is one of these. HIC, based in Mexico City, is a network of around 300 NGOs and CBOs concerned with human settlements development. The Executive Director of HIC is Mr. Enrique Ortiz.

The objectives of the HIC-implemented inter-regional LIFE project are to:

- strengthen current and developing projects and social processes which incorporate sustainable technologies for drinking water and sanitation provision on the urban scale, and which facilitate and promote the democratic management of the city;

- establish and promote action strategies that allow the development of technologies and their implementation in cooperation with local governments;

- disseminate the identified experiences in order to widen the level of acceptance of this type of local initiative and search at both societal and governmental, especially local government, levels; and

- advance the development of the HIC "Habitat and Environment" programme in each of its three areas including networking, research and action, and publication and dissemination.

The project consists of four parts: fifty summary case studies; fifteen in-depth case studies; a state-of-the-art study on water published as the book Water is a Commons, by Jean Roberts; and an *international workshop* to exchange experiences and lessons of the fifteen in-depth case studies.

Workshop Summary

The international workshop took place in Tepoztlan, Morelos, Mexico, from to 6 - 9 December 1994. The participants, who made presentations on the case studies, came from Pakistan, India, Senegal, Kenya, Colombia, Ecuador, Peru, Brazil and Mexico.

The agenda (see Annex 1) included a discussion of the book Water is a Commons; a presentation of the case studies synthesis (see Annex 2); presentations and discussion on the fifteen in-depth case studies (see Annex 3) in five panels - Water and Social Processes; Water Management: Political and Social Responses; Sanitation: Social and Technical Alternatives; Local Inter-Sectoral Partnerships; and Alternative Treatment Plants; identification of perspectives for interaction and fields of common interest for further development and expansion of the project; discussion of Stage II Strategy; a field visit to case study sites in the Cuernavaca areas; and a final outline of strategy paper for Stage II. The UNDP representative made an opening statement on sustainable human development (SHD) and the LIFE Programme, participated in the substantive discussions and made a concluding statement on possible follow up activities. Copies of the book and the case studies are available upon request.

Workshop Discussion

In the workshop opening session, the UNDP representative raised several questions for the participants, including: What have you learned about promoting local-local dialogue? What are the blocks to local-local dialogue? How can partnerships be catalyzed? What have you learned about sustainable technologies for drinking water and sanitation services? How can successful approaches be transferred? How can attitudes and assumptions be changed in order to change behaviour and structures? How can we ensure the perspective of the poor?

The presentation by Mr. Jean Roberts, the author of the book, Water is a Commons, stressed that water, just as air, is not a scarce commodity with a market price, but is by its very nature a gratuitous natural resource available to all people. The water needs of the rich should not be the norm for determining the distribution and price of water. The concept of scarcity is an imbalance between means and desires. It is the definition of human beings as economic beings that gives rise to the phenomenon of scarcity. The concept of supply and demand creates the concept of scarcity. Water is very particular, concrete phenomenon not a universal concept. Taking care of the commons would also take care of the weak and of the environment. The subsistence rights of the weak must be protected. The sharing of water was perhaps the basis of law.

Mr. Joel Audefroy of the HIC Secretariat in Mexico City made a presentation on the synthesis of the fifteen case studies. The case studies reflect cultural and social differences. New channels have been set up between NGOs and local authorities. There has been mutual recognition, sometimes with local pressure. Technological solutions and social processes are closely related with democratic processes in the management of technical systems a key to sustainability. Alternative technological solutions open the door to new social relations including alternative financing mechanisms. Some solutions involved income generation and decentralization of systems and affected urban policies.

The fifteen case-studies were then presented in panels followed by discussion (see Annex 3 for summaries; complete case studies are available upon request.)

Workshop Conclusions and Follow Up

In conclusion, the UNDP and HIC representatives suggested that the case studies should be translated into English, French and Spanish, published and disseminated utilizing various networks such as HIC, UNDP and ICLEI. Interchange workshops should take place regionally to discuss the applications of the various technologies and social processes. Policy dialogue workshops should be conducted at the municipal, provincial and national levels to apply the lessons from the case studies to urban policy formulation. Efforts at transferring various approaches between cities and countries should be undertaken.

In addition, this interregional project should be linked to the pilot countries of the LIFE Programme. The variety of entry points should be analyzed, as well as the roles of the social actors, the social processes used in implementation, the various technological solutions and systems, e.g., dry pit latrines, water filtering, use of plants in water purification, composting, donkey cart collection of waste, condominial sewage lines and river conservation, and the implication for replication and policy dialogue. Workshops should also be conducted using the Robert's book to provoke discussion. The best practices from this interregional LIFE project should be taken to HABITAT II in Istanbul in 1996. UNDP Country Offices and Regional Bureaux should also be made aware of the case studies.

Annexes

1. Agenda of the International Workshop
2. Principal Lessons from the Fifty Case Studies
3. Outline of the Fifteen In-Depth Case Studies

R. Work
MDGD/BPPS
12.12.94.

HIC LIFE Project
PROMOTION OF SUSTAINABLE TECHNOLOGIES
IN DRINKING WATER AND SANITATION SERVICES IN URBAN SETTLEMENTS

INTERNATIONAL WORKSHOP

In conclusion of Project Stage I and in preparation for Stage II

6 - 9 December 1994
Tepoztlán, Morelos, Mexico

HABITAT INTERNATIONAL COALITION

DRAFT AGENDA

6 December

11:00 a.m.

1. Welcome and Introduction to Workshop

- Enrique Ortiz, HIC — 10 min.
- Robertson Work, UNDP/LIFE — 15 min.

2. Approval of Agenda and Workshop Methodology — 20 min.

3. Presentation and Discussion of Core Products

- *Water is a Commons*, Jean Robert — 25 + 40 min. discussion
- Case Studies Synthesis, Joël Audefroy — 20 + 20 min. discussion

1:30 p.m. lunch

3:00 p.m.

4. Presentation and Discussion of Case Studies

Panel 1: Water and Social Processes

- Quito, Ecuador (CIUDAD) — 20 min.
- Bombay, India (YUVA) — 20 min.
- Bogotá, Colombia (ENDA A.L.) — 20 min.

Discussion — 30 min.

coffee break — 20 min.

Panel 2: Water Management: Political and Social Responses

- Ahmedabad, India (CEPT) — 20 min.
- Lima, Peru (5 cases) — 40 min.
  (CENCA, DESCO, ALTERNATIVA, CIDAP, CIPUR)

Discussion — 30 min.

7 December

10:00 a.m.

Panel 3: Sanitation: Social and Technical Alternatives

- Bamako, Mali (GIE GIGUI) — 20 min.
- Cuernavaca, Mexico (CIE) — 20 min.
- Karachi, Pakistan — 20 min.

Discussion — 30 min.

coffee break — 20 min.

7 December (continued)

Panel 4: Local Inter-Sectoral Partnerships

- Fortaleza, Brazil, (CEARA, Periferia)	20 min.
- Nairobi, Kenya (UNDUGU)	20 min.
- Rufisque, Senegal, (ENDA-Rup)	20 min.
Discussion	30 min.

1:30 p.m. lunch

3:00 p.m.

Panel 5: Alternative Treatment Plants

- Cali, Colombia, (CINARA)	20 min.
- Naucalpan, Mexico, (FEXAC)	20 min.
- Tohouè, Benin, (CTOM EMMAÜS)	20 min.
Discussion	30 min.

coffee break 20 min.

5. Identification of Perspectives for Interaction and Fields of Common Interest for Further Development and Expansion of the Project

from the perspectives of:
- participants
- UNDP
- HIC 60 - 90 min.

8 December

9:00 a.m.

6. Project Stage II: Discussion of Strategy

Possible elements for the expansion and further development of the most promising technologies and methodologies and the support and strengthening of the social processes:
- Intra- and inter-regional exchanges
- dissemination of Case Studies and Analysis Document
- joint actions with local governments
- elaboration and promotion of policy proposals
- promotion of local events, etc.

1:30 lunch

3:00 p.m.

7. Field visit to case study sites in the Cuernavaca area

8:30 p.m. social event

9 December

9:00 a.m.

8. Final Outline of Strategy Paper for Project Stage II

1:30 p.m. lunch

4:00 return to Mexico City

Promotion des technologies d'eau potable et d'assainissement durables dans les quartiers urbains
Promoción de las tecnologías sustentables de agua potable y saneamiento en asentamientos urbanos
Promotion of the sustainables technologies in drinking water and sanitation in urban settlements

Principales lecciones de los 50 casos identificados
Lessons from about 50 experiences identified
Principales leçons des 50 expériences identifiées

Proyecto HIC/LIFE 1994

Primera fase

Water and sanitation: when the city dwellers take the plunge

Lessons from about 50 experiences identified in Africa, Latin America and Asia

HIC/LIFE Project 1994

To day, according to then World Development Report of the World Bank (1992) more than a billion people still don't have access to fresh, safe water and 1,7 billion men and women are deprived of sanitation. However, the number of innovative experiments is continually growing in order to meet these needs. They are carried out by the inhabitants, with the support of the NGOs and certain town councils.

Within the framework of one of the UNDP's programmes (Local Initiative Facility for Urban Environment, LIFE), the Habitat International Coalition (HIC) has identified fifty or so cases in which inhabitants were the principal actors in managing water supplies and sanitation. These experiences took place in an urban context, sometimes thanks to the town councils and often on the initiative of an NGO or social organisations, but rarely thanks to the private sector, whose interests often diverge from those of the inhabitants.

According to the first lessons learnt from 30 or so recent participatory experiments in Latin America, a dozen in Africa and ten or so in Asia, the methods of action and the impact of the projects vary greatly from one region to another.

Classification and comparison of the actions

While it is true that some 50 cases do not constitute a representative sample group to allow us to derive definitive conclusions, a comparison of the size and scale of the experiences identified in Africa and Latin America allows us to observe a number of interesting trends.

With respect to the number of beneficiaries, the drinking water and sanitation experiences identified in Africa and Asia reach typically large numbers of persons (projects with more than 1500 beneficiaries), and more massive scale projects (2 projects reached more than 100,000 beneficiaries in Africa, and 3 reached between 100,000 and 1,000,000 beneficiaries in Asia). In Latin America we see the exact opposite: some projects involve between 50 and 1000 beneficiaries, but none reach more than 100,000. On the other hand more experimental projects, including neighborhood scale community level experiences, are found in Latin America.

Close to half of the projects identified in Latin America were carried out through the initiative of CBOs and/or NGOs. This demonstrates the active role of the NGOs and social organizations in the urban infrastructure sector. The majority of these projects grew out of a need expressed by the inhabitants. The others were initiated by professionals or local governments, but are the products of an institutional logic and received in most cases national or international technical or financial support.

In Africa, only 3 of the 11 identified cases were carried out at the initiative of the local or national authorities: the rest were begun by community based organizations or local NGOs. The municipalities appear to be less dynamic in Africa than the social organizations and local NGOs despite the fact that there are relatively few of the latter.

In Asia, in only 2 cases were carried out on the initiative of local goverments, while the others were launched by NGOs and social organisations. Nearly, all the projects have received financial backing from national or international organisations. The most extensive to be implemented in this continent affects up to 4 million people (SULABH International in India).

In Latin America the water supply systems are most often conventional (water networks) and centralized, while the selected sanitation systems are "alternative" and decentralised.

Only 3 of the chosen experiences in Africa opted exclusively for conventional sewerage and water purification and distribution technologies. Most of the cases recurred to alternative systems without centralized and heavy infrastructure: latrines, absorption wells and low-cost serviced water treatment equipment.

In Asia, the operators also resort to conventional methods, but which cost little, to solve the problems of providing a supply of drinking water. On the other hand, the sanitation techniques, particular the latrines, are alternative. Very often, groups of inhabitants take charge of the upkeep and maintenance of the systems. In certain cases, it is groups of women which manage the installations in a decentralised manner.

Social participation and local democracy in the projects

The drinking water and sanitation experiences form a space in which are found numerous economic, social and cultural dynamics despite the fact that they are not always at the origin of the actions.

Some projects allow the consolidation of the land tenure situation of the inhabitants such as in Salvador de Bahía, Brazil; Coatzalcoalcos, Mexico or Ganeshnagar in Poona, India. More than half of the

identified projects promoted the strengthening of the organizational skills of the population.

But the decentralized methods implying greater inhabitant responsibility for their wastes (solid and liquid) are still few. For the municipalities it is seen to remain difficult to renounce centralised, expensive and non-sustainable solutions such as non-treated sewerage and unlimited collection of waters from outside basins. The case of Indians town councils are more inclined to adopt a decentralised management of sanitation, which is then taken charge of by social organisations.

In the end the participation motives of the inhabitants in the projects are not always evident. In some occasions the motives are outside of the expected results of the projects, such as in the Grand Yoff neighborhood in Dakar, Senegal where the inhabitants participated for external motives: to affirm a social position or a position within their own lineage.

Cultural Impacts

Furthermore, the cultural impact of these operations is not always obvious. It has been zero for more than half of the projects studied and even when this is not the case, it is generally technical innovations (the introduction of compots latrines and systems for filtering and processing liquid waste), rather than social ones (new forms of social organisation, original partnerships) which have brought changes. We can refer to the Sulabh International experiment in India. Thanks to the introduction of public siphon latrines, this experiment has contributed to the liberation and social reintegration of the scavengers, belonging to the untouchables in the cast system and who are no longer obliged to empty the latrines manuelly. Conversely, within the framework of projets implemented at El Cusco and Ventanilla (Peru), it is the traditional social organisation systems - such as Minka and Aynu - which were used as a basis during the excavation work carried out in mutual aid.

On the other hand, the customary cultural methods of protecting water are rarely used and strengthened by the NGOs and town councils. Some of them have attempted to do so, however, notably for harnessing and reusing rainwater: this is the case of 7 experiments out of 28 in Latin America, 2 in Africa (ENDA Third World in Rufisque in Senegal and EMMAÜS International at Tohoué near Porto-Novo in Benin) and one experiment in Asia (Sawyer Memorial Social and Welfare Association, in Tamil Nadu, India).

The systems and sustainable development

In the water supply projects 10 types of systems were identified as susceptible to the strengthening of sustainable development and the improvement of the environment: appropriate water collection, storage and supply, anti-land erosion systems, water treatment and the rationalisation of water consumption. In the sanitation projects were found 4 types of systems: wastewater treatment, return to the soil (after treatment), and reduction of infrastructure and sewer water processing costs.

Very few sustainable water systems are observed among the projects identified in Africa, and especially in francophone Africa (Senegal, Benin, Mali, Niger and Zaire). The opposite is found with respect to sustainable sanitation strategies; all of the projects incorporate at least one or two of the above noted systems.

The sewerage and septic tank systems are not suited to the economic conditions of the people of India and Pakistan whose lack of space and accomodation is almost proverbial. The sewerage system needs not only a sufficient quantity of running water but its regular supply for the waste disposal. Moreover, the costs involved in developing, constructing and maintaining the sewerage system are immense. So mostly of the Asian cases improve individual alternative systems more sustainable like pit latrines, waterseal latrines, soakpit, etc.

In Latin America the panorama is distinct: while the whole range of sustainable systems are found in countries such as Colombia, in countries such as Brazil, Guatemala, Mexico and Nicaragua the sustainable systems are found only for sanitation. The later are countries where the water problems are less critical than for example in Peru where all the sustainable systems revolve around the drinking water problem, especially in the metropolitan Lima zone.

In Asia, however, the sustainability of the projects is not considered essential. What is most important in India and Pakistan is implementing short-term technical solutions, so as to meet the populations' demands on a wide scale. Thus, few pilot actions based on techniques of liquid waste filtering or ground water protection have been experimented with in these countries.

Globally, the techniques and sanitary options aiming at sustainable developement and protecting natural resources are little used today. The drinking water and sanitation sector is still controlled by the lobbies of large civil engineering firms. Sometimes thamks to financing from international agencies, theses firms set up conventional centralised systems which leave little room for local initiatives and cost-effective solutions.

4.4 Potential or limits in the expansion or reproduction of the projects

The potential for the expansion or replication of the projects appears to be linked to the following criteria:

a) technology: The sanitary technology used (coventional or alternative) must be able to be used easily by the inhabitants. Systems using complex upkeep techniques considerably limit their implementation.

b) cost: Certains projects imply financial participation from the beneficiaries (who have to borrow the money) or financial backing from international aid (to local governments, etc.), which limit their durability when these resources are used up.

c) level of development of the social organisation: the participative projects present a structured and dynamic organisation of the inhabitants (youth groups, management committees, women's groups, etc.). These groups are the key to the dissemination of the experiences.

d) institutional relations: the dialogue and co-operation between the different actors (NGOs, local governments, etc.) are deciding factors in the follow-up of the projects. Those which don't involve any form of partnership cannot generally be reproduced extensively, for they are too specific to one case and related to one single instigator.

e) environmental implications: the sustainable use of natural resources facilitates the reproduction of long term projects, as well as their sustainability.

f) land tenure status: numerous actions -in particular those relying on individual sanitations practices (compost latrines, water tank for water storage, etc.) - have been able to be implemented and given wide scale circulation because the inhabitants occupied their plots of land legally. Certains projects enabled the inhabitants' land situation to be consolidated, as in Salvador de Bahia in Brazil and Coatzacoalcos in Mexico.

Conclusions

Water and sanitation are generally power struggle issues, as illustrated by the fierce competition amidst the public services and private sector, but they are rarely a tool of sustainable development. However,certains of the identified experiences shows that social organisations which tackle theses problems by taking the bull by the horns can turn them into a tool of social transformation and sustainable development.

Joel Audefroy
Habitat International Coalition

1 Cases selection in Africa

Benin, treatment plant of waste waters in Tohoué

This project began in 1989 by the initiative of EMMAUS International in the City of Porto Novo. A treatment plant facilitated sewage and wastewater recycling through a system of lagoons. The project favored domestic alternatives given that the plant processed the contents of septic tanks.

Kenya: Kitui Pumwani informal settlement of Nairobi

This project was carried out in 1988 through the initiative of the local NGO UNDUGU in Nairobi. The community participates in the decision-making, in the control of the project and in the administration of the system (rain water collection, latrines and sewerage).

Mali: sanitation and protection of the environment at Hamdallaye in Bamako

This project began in 1990 through the initiative of a youth group, and achieved the participation of the entire population of the neighborhood of Hamdallaye in Bamako in the construction of absorption wells for wastewaters.

Senegal, sanitation in Diokoul and surrounding area, Rufisque

This project was carried out in 1990 through the initiative of ENDA RUP in a low-income neighborhood of Rufisque (Diokoul), and involved the development of an alternative wastewater ("grey waters" - serviced waters not including sewage) processing system via a system of lagoons. The population of Diokoul was directly involved in the project together with the NGO and the municipality, suggesting that this project has a high potential for expansion or reproduction.

2 Cases selection in Latin America

Brazil, shallow sewerage system in Fortaleza

This project was carried out in 1989 with the initiative of the Secretary of Urban Development and Environment (SDU) through the Housing Company (COHAB) of the State of Ceara. The case was selected because it is a typically Brazilian solution ("condominial sewerage") that allows the lowering of the cost of the infrastructure. The secondary drainage network passes through the back end of the plots instead of by the street.

Colombia, women and water quality, Bogota and Santa Maria

This project was carried out in 1989-1991 and again in 1991-1993 through the initiative of ENDA A.L. with women from the communal gardens (FUNDAC) in Bogota. The project developed an original method of training and dissemination. The purification of the water was achieved through slow sand filters. This project was selected for its originality and for being one of the few that directly and specifically involved women.

Colombia, improvement of water and sanitation in La Sirena, Cali

This project, carried out in 1986 through the initiative of the organization Comunal, was selected to provide a balance between the free provision of water and water collected through aqueduct, and also due to the important role assumed by the social organization in water management.

Ecuador: community participation in water management and habitat

This project was carried out in 1993 through the initiative of CIUDAD/REDES with support of the International Secretary of Water, Canada (ISW) and the participation of 43 neighborhoods of Quito and 30,000 persons. Training campaign, construction by self-help of a water tank, communitary works carried out by mutual aid, are the main actions.

Mexico: dual treatment plant in Naucalpan, Mexico State

The project is involving a social organization (UPREZ) and an NGO (FEXAC) to carry out in 1993 a dual treatment plant for 1000 inhabitants. It is a non-conventional experience and it was difficult to get legal authorizations

Mexico, civil society and sanitation alternatives technology in Cuernavaca, Morelos

This project, carried out beginning in 1983 by a professional with the support of the local government, was selected because it complied with almost all the criteria of environmental protection and sustainability. It is a dry sanitation system based on the design of the Vietnamese latrine.

Peru, water supply and sanitation in urban settlements, Lima

Each of the 5 Lima cases presents a particular interest in water supply and sanitation. It is a global study of the 5 experiences of water supply and rationalized distribution, rich in lessons that have recently developed in the Lima metropolitan zone by 5 ONG (DESCO, CIPUR, CIDAP, CENCA, ALTERNATIVA). Many of the organizations are members of the HIC network.

3. Cases selection in Asia

India: Waiting for water, the experiences of poor communities in Bombay.

This is a study of 6 experiences of the urban poor in Bombay to get water, carried out by SPARC in 1994.

India: Creating a voice to build a community: Dharavi in Bombay

The involvment of the community based organization PROUD in improving basics services since 1979: formation of the Water Committee, the Drainage and Garbage Committee and the Latrine Committee.

India: Water, River and the City, Ahmedabad, India.

This case study is not a community project but a study on a city in western India: Ahmedabad. It show how a river (the Sabarmati river) which should have been a major resource for water and recreation due to neglect and mismanagement by the authorities, abuse by industry and apathy by the people has been polluted and rendered a liability. Its is the history of the sporadic efforts to develop the river front and the water supply system by the joint community-authority initiative to restore to the river its lost prestige and utility in organizing a sustainable effort.

Pakistan: The Baldia Soakpit Pilot Project

The Baldia Soakpit Pilot Project (BSPP) is one of two major community based sanitation projects in Karachi. In 1979, BSPP introduced the idea of low-cost,and long-life soakpits. By 1984, were built 200 pit latrines and 3,060 soakpits with UNICEF support. People themselves later built an additional 2,630 soakpit.

END

United Nations Development Programme

DEC 19 1994

Interoffice Memorandum

To: See Distribution List Date: 12 December 1994

From: Robertson Work
Programme Coordinator
LIFE/UDU/MDGD/BPPS
Extension: 6602

Subject: **Report on the LIFE/HIC International Workshop on the Promotion of Sustainable Technologies in Drinking Water and Sanitation Services, 6-9 December 1994, Mexico**
File: HIC/LIFE

Attached please find the Back-to-the-office report on the "International Workshop on the Promotion of Sustainable Technologies in Drinking Water and Sanitation Services", held 6-9 December 1994, in Tepoztlan, Mexico. This workshop is part of an interregional LIFE project being implemented by the NGO network, Habitat International Coalition (HIC).

The workshop consisted of discussion of a state-of-the-art study on drinking water by Jean Roberts, Water Is a Commons, and fifteen case studies on water and sanitation from Pakistan, India, Senegal, Kenya, Colombia, Ecuador, Peru, Brazil and Mexico. The workshop demonstrated the close linkages between technical solutions and social processes and the implications of micro projects for macro policy formulation.

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